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Supplemental Material

Particulate Oxidative Burden as a Predictor of Exhaled Nitric Oxide in Children with Asthma

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random subject and day of study factors. Additional personal variables were included adjusted models. The final model presented in the manuscript corresponds to Adjusted Model 1.

Table S3B. Comparison of the percent change in FeNO per IQR for pollutant exposure metrics expressed per unit volume for a 0-, 1- and 2-day lag periods in model using varying levels of model adjustment. The base model included fixed effects for sex and ambient temperature as well as random subject and day of study factors. Additional personal variables were included adjusted models. The final model presented in the manuscript corresponds to Adjusted Model 1.

Table S4. Evaluation of ambient ozone as a potential confounding variables to the final, linear mixed model. The final model included fixed effects for sex, ambient temperature, the presence of allergies and use of beta-agonists as well as random subject and day of study factors. A comparison of the percent change in FeNO per IQR is shown for the personal pollutant exposure metrics expressed per unit volume for the 0-lag period.

Table S5A. Effects of the oxidative burden exposure metrics expressed per unit mass and PM mass on the percent change in FeNO as modified by medication use (none, any, corticosteroids, beta-agonists, stimulants) for 0-, 1- and 2-day lag periods. Models were adjusted by the fixed effects (temperature, sex, the presence of allergies, eczema before the age of 2, occurrence of an asthma attack in the first year of life and use of beta-agonists) as well as random subject and day of study factors.

Table S5B. Effects of the oxidative burden exposure metrics per unit volume and PM mass on the percent change in FeNO as modified by medication use (none, any, corticosteroids, beta-agonists, stimulants) for 0-, 1- and 2-day lag periods. Models were adjusted by the fixed effects (temperature, sex, the presence of allergies, eczema before the age of 2, occurrence of an asthma attack in the first year of life and use of beta-agonists) as well as random subject and day of study factors.

Table S6A. Effects of oxidative burden exposure metrics expressed per unit mass and extracted PM mass from the personal exposure filter on the percent change in FeNO as modified by dust, mould, pollen and fur allergies for 0-, 1- and 2-day lag periods. Random and fixed effects included in mixed models are the same as Table S3A.

Table S6B. Effects of oxidative burden exposure metrics expressed per unit volume and PM mass concentration on the percent change in FeNO as modified by dust, mould, pollen and fur

allergies for 0-, 1- and 2-day lag periods. Random and fixed effects included in mixed models are the same as Table S3A.

Figure S1. Ambient ozone concentrations in Montreal, Canada. Mean daily concentrations and the associated standard deviations across four residential Environmental Canada-operated monitoring stations in Montreal are presented for the study period, October 6, 2009 to April 28, 2010.

Figure S2. Ascorbate and glutathione-related oxidative burden per micromole of individual quinone and metal solutions. All quinones and metal salts were diluted to a final concentration of 1.1 or 2.5 μM in high pressure liquid chromatography grade water containing 5% methanol for oxidative burden assessment.